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20985 7590 12/31/2007 FISH & RICHARDSON, PC P.O. BOX 1022 MINNEAPOLIS, MN 55440-1022			EXAMINER COLIN, CARL G	
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

09/612,324

Applicant(s)

EDWARDS ET AL.

Examiner

Carl Colin

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 31 October 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-3, 7-19, 26-30, 32, 33, 36 and 38-40 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3, 7-19, 26-30, 32, 33, 36 and 38-40 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 10/31/2007 has been entered.

Response to Arguments

2. In communications filed on 10/31/2007, applicant amends claims 1, 11, and 26. The following claims 1-3, 7-19, 26-30, 32-33, 36, and 38-40 are presented for examination.

2.1 Applicant's remarks, pages 8-14, filed on 10/31/2007, with respect to the rejection of claims 1, 11, and 26, have been fully considered, but they are not persuasive. The independent claims have been amended to recite "establishing by the source computer system a first bi-directional barrier traversal session"... "establishing by the destination computer system a second bi-directional barrier traversal session". Applicant argues that Richards merely discloses unidirectional link between the client computers and the nexus (service) and further argues that Richards fails to disclose the session is established by the client computers. Examiner respectfully disagrees as Richards discloses both the client computer and the service provider or second computer initiates communication and communicates with the nexus (service) and the

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nexus (service) sends response to both the client and the service provider or second computer (see example figure 9 with description, column 9, line 50-column 10, line 48). Therefore, there is a bidirectional link between the first computer and the nexus as well as between the second computer and the nexus. Claims 1-3, 7-19, 26-30, 32-33, 36, and 38-40 remain rejected in view of the same prior art.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 1-3, 7-19, 26-30, 32-33, 36, and 38-40 are rejected under 35 U.S.C. 112, first paragraph, as written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Applicant's specification fails to describe establishing by the destination computer system a second bi-directional barrier traversal session between the destination computer system and the forwarder/relay service, the forwarder/relay service maintaining the second session if the first session is temporarily lost and reestablishing the virtual connection when the first session is re-established. The specification on the other hand describes on page 16, line 18 - page 17, line 13 the use of one firewall and fails to describe a second bi-directional barrier traversal session and the destination computer system establishing a second bi-directional

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barrier traversal session, thus fails to support “establishing by the destination computer system a second bi-directional barrier traversal session between the destination computer system and the forwarder/relay service, the forwarder/relay service maintaining the second session if the first session is temporarily lost and reestablishing the virtual connection when the first session is re-established” as claimed.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-3, 7-19, 32, and 36 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent 6,754,707 to **Richards et al** in view of US Patent 6,421,732 to **Alkhatib et al** and in view of US Patent 5,564,070 to **Want et al** in view of US Patent 5,999,979 to **Vellanki et al**.

As per claim 1, Richards et al substantially discloses a method of establishing communications comprising: *establishing a virtual connection between a source computer system and located behind a first connectivity barrier (firewall) and a destination computer system and located behind a second connectivity barrier (firewall), for example (see column 11, claim 1 and column 12, claim 14) wherein establishing the virtual connection comprising: establishing by the source computer system a first bi-directional barrier traversal session (both the client and the service provider connect to the nexus (service) and the nexus is able to communicate with them, see example figure 9 with description, column 9, line 50-column 10, line 48) between the source computer system and a forwarder/relay service and establishing by the destination computer system a second bi-directional barrier traversal session between the destination computer system and the forwarder/relay service, for example (see column 11, claim 1 and column 12, claim 14). See also column 4, line 55 through column 5, line 50. Richards discloses restoring previously working states from reference states in a transparent way (column 3, lines 42-61). Richards et al teaches “a nexus that allows client programs to communicate by acting as a central junction where communications are sent and relayed to the appropriate client programs... the nexus forwards communication on the destination’s client registered downspout” and relaying information (see column 4, line 55 through column 5, line 50 and column 6, lines 10-15 and 35-46) that meets the recitation of forwarder/relay service. Richards et al further discloses the nexus supports network protocol SSL and other suitable encryption processes, the SSL provides data encryption, server authentication, message integrity and client authentication for a TCP/IP connection (see column 5, lines 48-64). Therefore as interpreted by the Examiner, Richards et al discloses encryption process and authentication using TCP/IP as part of*

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processed data to pass through the firewall. **Richards et al** discloses “client programs cannot normally communicate with each other over the Internet. The Internet utilizes TCP/IP as a standard for transmitting information. The nexus allows these client programs to communicate by acting as a central junction where communications are sent and relayed to the appropriate client programs... the nexus forwards communication on the destination’s client registered downspout” and relaying information (see column 5, lines 1-10). **Richards et al** is silent about representing data of a first application in a format associated with a proxy network protocol configured to communicate data corresponding to another application. However, **Vellanki et al** in an analogous art discloses selecting the most advantageous protocol for communication by a client computer (see column 3-4, summary of the invention) including representing data of a first application in a format associated with a proxy network protocol configured to communicate data corresponding to another application so that the data of the first application is communicated through the first connectivity barrier using the proxy network protocol” (see column 10, lines 44-54 and column 13, lines 4-17). **Vellanki et al** discloses data of the browser (first application) are represented in an HTTP format such as HTTP that is configured to communicate data corresponding to another application (such as proxy application or server application) so that the data of the client application is communicated through the first connectivity barrier using the proxy network protocol as interpreted by the Examiner. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the method of **Richards et al** to “representing data of a first application in a format associated with a proxy network protocol that is configured to communicate data corresponding to another application so that the data of the first application is communicated

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through the first connectivity barrier using the proxy network protocol as taught by **Vellanki et al** because it would allow selection of the most advantageous protocol to be used based on predefined protocol priority (see column 4, lines 33-38). One of ordinary skill in the art would have recognized some of the advantages as suggested by **Vellanki et al** so that the most advantageous protocol can be selected to traverse the firewall (see column 3, lines 19-40 and 56-60).

Richards et al also discloses establishing a virtual connection between two computers wherein a session between nexus and one of the computers remains open and even if the other computer connection is lost or interrupted the other computer re-establishes connection (see column 12, lines 42-45 and 63-67). **Richards et al** discloses maintaining the first session, but does not explicitly state maintaining the second session. It is apparent that any of the endpoint sessions can be maintained while the other endpoint connection is temporarily lost and re-establishing connection (e.g. roaming between networks). Roaming between networks is notoriously well known for a wireless to search between networks to reestablish sessions. Maintaining a connection to a destination endpoint when the source roams between network as the connection can be temporary lost is well known in the art as disclosed by **Want et al**. **Want et al** teaches maintaining connections among various computers in a wireless network including mobile computers, and further discloses the importance of maintaining connection even if the connection of the source endpoint is temporarily lost (see prior art, column 3, line 45 through column 4, line 55). See also column 7, lines 15-43. **Want et al** discloses that the application session is maintained even if the session with the mobile is temporarily lost as the mobile re-establishes connection while roaming. Therefore, it would have been obvious to one of ordinary

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skill in the art at the time the invention was made to modify the method of **Richards et al** to use source computer system as mobile users that can roam between networks and re-establish connection when the connection is temporarily lost while maintaining continuity session with the destination computer as taught by **Want et al** (column 7, lines 15-43) because one of the many advantages is that it permits any type of small device mobile units capable of roaming to use the system while maintaining processing continuity without compromising security (column 4, line 57 through column 5, line 40 and column 6, line 62 through column 7, line 43). One skilled in the art would have been motivated by the suggestions provided by **Want et al** in order to benefit from the advantages as discussed above and to be able to implement the invention with any mobile and stationary computers using various network systems.

Richards et al does not explicitly disclose *assigning virtual host name* to the computer system. It is known in the art that the packet can contain IP addresses and port numbers or/and domain names. **Alkhatib et al** in an analogous art teaches an IPNet gateway service that can forward and relay connections wherein the destination server is assigned a domain name (column 2, lines 53-60 and figure 1) and the client may have also a domain name (column 6, lines 37-47) so that address translation can be performed. **Alkhatib et al** also discloses the use of gateway as firewall (see column 1, lines 30-35), which meets the recitation of a barrier between a computer system and the gateway service as per Examiner's interpretation. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the method of **Richards et al** to include a gateway service that can associate DNS requests with host names because it provides an improved process of addressing source and destination computers based on the requests by performing address translation (column 1, lines 25-40 and column 1,

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line 60 through column 2, line 7) that can also be interpreted as processed data using a network protocol configured to tunnel through the gateway firewall as taught by **Alkhatib et al**. One skilled in the art would have been motivated by the suggestions provided by **Alkhatib et al** to provide a service that can forward and relay connections wherein the destination server is assigned a domain name with an improved process of addressing source and destination computers based on the requests by performing address translation.

As per claim 2, the references as combined above disclose the claimed method of claim

1. **Richards et al** discloses the limitation of wherein at least one of the connectivity barriers comprises a firewall, for example (see column 11, claim 1 and column 12, claim 14).

As per claim 3, the references as combined above disclose wherein at least one of the connectivity barriers comprises a consumer gateway (see **Alkhatib et al**, column 1, lines 32-33).

Claim 3 is therefore rejected on the same rationale as the rejection of claim 1.

As per claims 7-8, the references as combined above disclose the claimed method of claim 1. **Alkhatib et al** discloses wherein the virtual host names comprise part of a hierarchical naming system, (column 3, lines 53-60) and discloses using a DNS that allows users to search for host names (column 3, line 45 through column 4, line 7) that meets the recitation of providing a directory search application to allow a user to select the virtual host names. Therefore claims 7-8 are rejected on the same rationale as the rejection of claim 1.

As per claim 9, the references as combined above disclose the claimed method of claim 1, wherein the source system can roam between networks (see **Want et al**, column 7, lines 15-43). Claim 9 is therefore rejected on the same rationale as the rejection of claim 1.

As per claim 10, the references as combined above disclose the claimed method of claim 1. **Richards et al** further discloses the limitation of including dynamically assigning at least one server associated with the service to handle the sessions, for example (see column 7, lines 27-48).

As per claim 11, **Richards et al** substantially discloses a method of establishing communications between source and destination computer systems comprising: *establishing by the source computer system a first bi-directional barrier traversal session* (both the client and the service provider connect to the nexus (service) and the nexus is able to communicate with them, see example figure 9 with description, column 9, line 50-column 10, line 48) *between the source computer system and a forwarder/relay service and establishing by the destination computer system a bi-directional barrier traversal transport level communications connection between the service and the destination computer system, the destination computer system located behind a second connectivity barrier*, for example (see column 11, claim 1 and column 12, claim 14). **Richards et al** teaches “a nexus that allows client programs to communicate by acting as a central junction where communications are sent and relayed to the appropriate client programs... the nexus forwards communication on the destination’s client registered downspout” and relaying information (see column 4, line 55 through column 5, line 50 and column 6, lines

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10-15 and 35-46) that meets the recitation of *forwarder/relay service*. **Richards et al** further discloses the nexus supports network protocol SSL and other encryption process, the SSL provides data encryption, server authentication, message integrity and client authentication for a TCP/IP connection (see column 5, lines 48-64). Therefore as interpreted by the Examiner, **Richards et al** discloses encryption process and authentication using TCP/IP as part of processed data to pass through the firewall.

Richards et al is silent about representing data of a first application in a format associated with a proxy network protocol configured to communicate data corresponding to another application. However, **Vellanki et al** in an analogous art discloses selecting the most advantageous protocol for communication by a client computer (see column 3-4, summary of the invention) including representing data of a first application in a format associated with a proxy network protocol configured to communicate data corresponding to another application so that the data of the first application is communicated through the first connectivity barrier using the proxy network protocol” (see column 10, lines 44-54 and column 13, lines 4-17). **Vellanki et al** discloses data of the browser (first application) are represented in an HTTP format such as HTTP that is configured to communicate data corresponding to another application (such as proxy application or server application) so that the data of the client application is communicated through the first connectivity barrier using the proxy network protocol as interpreted by the Examiner. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the method of **Richards et al** to “representing data of a first application in a format associated with a proxy network protocol that is configured to communicate data corresponding to another application so that the data of the first application is

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communicated through the first connectivity barrier using the proxy network protocol as taught by **Vellanki et al** because it would allow selection of the most advantageous protocol to be used based on predefined protocol priority (see column 4, lines 33-38). One of ordinary skill in the art would have recognized some of the advantages as suggested by **Vellanki et al** so that the most advantageous protocol can be selected to traverse the firewall (see column 3, lines 19-40 and 56-60).

Richards et al discloses transport layer protocol such as TCP/IP connection can be used to establish communication between client/server using latest web browsers such as Netscape known to support HTTP, FTP, etc. (column 5, lines 43-65 and column 1, lines 56-64) that meets the recitation of *establishing a transport level communications between the forwarder/relay service and the destination computer system located behind a second connectivity barrier* (firewall). **Richards et al** also discloses establishing a virtual connection between two computers wherein a session between nexus and one of the computers remains open and even if the other computer connection is lost or interrupted the other computer re-establishes connection (see column 12, lines 42-45 and 63-67). **Richards et al** discloses maintaining the first session, but does not explicitly state maintaining the second session. It is apparent that any of the endpoint sessions can be maintained while the other endpoint connection is temporarily lost and re-establishing connection (e.g. roaming between networks). Roaming between networks is notoriously well known for a wireless to search between networks to reestablish sessions. Maintaining a connection to a destination endpoint when the source roams between network as the connection can be temporary lost is well known in the art as disclosed by **Want et al**. **Want et al** teaches maintaining connections among various computers in a wireless network including

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mobile computers, and further discloses the importance of maintaining connection even if the connection of the source endpoint is temporarily lost (see prior art, column 3, line 45 through column 4, line 55). See also column 7, lines 15-43. **Want et al** discloses that the application session is maintained even if the session with the mobile is temporarily lost as the mobile re-establishes connection while roaming. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the method of **Richards et al** to use source computer system as mobile users that can roam between networks and re-establish connection when the connection is temporarily lost while maintaining continuity session with the destination computer as taught by **Want et al** (column 7, lines 15-43) because one of the many advantages is that it permits any type of small device mobile units capable of roaming to use the system while maintaining processing continuity without compromising security (column 4, line 57 through column 5, line 40 and column 6, line 62 through column 7, line 43). One skilled in the art would have been motivated by the suggestions provided by **Want et al** in order to benefit from the advantages as discussed above and to be able to implement the invention with any mobile and stationary computers using various network systems.

For additional support, Applicant's amendment is also rendered obvious by **Alkhatib et al**. **Alkhatib et al** in an analogous art teaches an IPNet gateway service that can forward and relay connections wherein the destination server is assigned a domain name (column 2, lines 53-60 and figure 1) and the client may have also a domain name (column 6, lines 37-47) so that address translation can be performed. **Alkhatib et al** also discloses the use of gateway as firewall (see column 1, lines 30-35), which meets the recitation of a barrier between a computer system and the gateway service as per Examiner's interpretation. Therefore, it would have been obvious

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to one of ordinary skill in the art at the time the invention was made to modify the method of **Richards et al** to include to include a gateway service that can associate DNS requests with host names because it provides an improved process of addressing source and destination computers based on the requests by performing address translation (column 1, lines 25-40 and column 1, line 60 through column 2, line 7) that can also be interpreted as processed data using a network protocol configured to tunnel through the gateway firewall as taught by **Alkhatib et al**. One skilled in the art would have been motivated by the suggestions provided by **Alkhatib et al** to provide a service that can forward and relay connections wherein the destination server is assigned a domain name with an improved process of addressing source and destination computers based on the requests by performing address translation.

As per claim 12, the references as combined above disclose the claimed method of claim 11. **Richards et al** further discloses the limitation of wherein at least one of the connectivity barriers comprises a firewall, for example (see column 11, claim 1 and column 12, claim 14).

As per claim 13, **Richards et al** is silent about the firewalls comprising consumer gateways such as (router) which is a well known feature. **Alkhatib et al** discloses the use of gateway as firewall (see column 1, lines 30-35). Claim 13 is rejected on the same rationale as the rejection of claim 11 above.

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As per claim 14, the references as combined above disclose the claimed method of claim 11. **Richards et al** further discloses the limitation of including assigning one or more servers associated with the service to handle the sessions, for example (see column 7, lines 27-48).

As per claim 15, the references as combined above disclose establishing session based on a virtual host name associated with the source computer system (see **Alkhatib et al**, column 6, lines 37-47). Claim 13 is also rejected on the same rationale as the rejection of claim 11.

As per claims 16-17, **Alkhatib et al** discloses wherein the virtual host names comprise part of a hierarchical naming system, (column 3, lines 53-60) and discloses using a DNS that allows users to search for host names (column 3, line 45 through column 4, line 7) that meets the recitation of providing a directory search application to allow a user to select the virtual host names. Therefore claims 16-17 are rejected on the same rationale as the rejection of claim 11.

As per claim 18, the references as combined above disclose the claimed method of claim 11, wherein the source system can roam between networks (see **Want et al**, column 7, lines 15-43). Claim 18 is therefore rejected on the same rationale as the rejection of claim 11.

As per claim 19, **Richards et al** discloses the limitation of including dynamically assigning at least one server associated with the service to handle the sessions, for example (see column 7, lines 27-48).

As per claim 32, the combined references disclose the limitation of wherein the proxy network protocol includes at least one of HTTP, FTP, and SOCKS (see **Richards et al**, column 5, lines 43-65). **Richards et al** discloses transport layer protocol such as TCP/IP connection between client/server communication using latest web browsers such as Netscape known to support HTTP, FTP, etc. as interpreted by Examiner.

As per claim 36, the combined references disclose the limitation of wherein the proxy network protocol includes at least one of HTTP, FTP, and SOCKS (see **Richards et al**, column 5, lines 43-65). **Richards et al** discloses transport layer protocol such as TCP/IP connection between client/server communication using latest web browsers such as Netscape known to support HTTP, FTP, etc. as interpreted by Examiner.

5. **Claims 33 and 39** are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent 6,754,707 to **Richards et al** in view of US Patent 6,421,732 to **Alkhatib et al** and in view of US Patent 5,564,070 to **Want et al** in view of US Patent 5,999,979 to **Vellanki et al** as applied to claim 1 and further in view of US Patent 6,185,606 to **Bereiter**.

As per claims 33 and 39, **Richards et al** does not explicitly disclose making a determination of the communication node of the destination computer system. **Bereiter** in an analogous art teaches wherein establishing the second session comprises determining a communication mode for communicating between the destination computer system and the forward/relay service and communicating data between the destination computer system and the

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forward/relay service according to the determined communication mode (see Bereiter, column 4, lines 3-23 and column 4, line 51 through column 5, line 14). **Bereiter** discloses a communication method to adapt to different mode of communication depending on the connection preferences. For instance, a transport layer point-to-point protocol connection may be used for messages originating from the client to the server whereas another connection preference is used for messages originating from the server to the client that meets the recitation above. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the method as combined above to determine the communication mode of the destination computer system and communicating data between the destination computer system and the forward/relay service according to the determined communication mode as taught by **Bereiter**. One skilled in the art would have been motivated by the suggestions provided by **Bereiter** so as to provide the benefit to adapt to the available communication path.

6. **Claims 26 and 38** are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent 6,754,707 to **Richards et al** in view of US Patent 5,564,070 to **Want et al** in view of US Patent 5,999,979 to **Vellanki et al**.

As per claim 26, Richards et al substantially discloses *an article comprising a computer-readable medium including computer-executable instructions for causing a computer system, (see column 11, lines 9-18) in response to a request from a first computer system located behind a first connectivity barrier to establish connectivity to a second computer system, for*

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example (see column 11, claim 1 and column 12, claim 14) to: *assigning a server to handle a first bi-directional barrier traversal session initiated by the second computer system between the first computer system and a service*, for example (see column 7, lines 27-48). and further teaches *establish a bi-directional barrier traversal session initiated by the second computer system if the second computer system is located behind a second connectivity barrier*, for example (see column 4, line 63 - column 5, line 10). **Richards et al** also discloses (both the client and the service provider connect to the nexus (service) and the nexus is able to communicate with them, see example figure 9 with description, column 9, lines 34-35 and line 50-column 10, line 48).

Richards et al teaches “a nexus that allows client programs to communicate by acting as a central junction where communications are sent and relayed to the appropriate client programs... the nexus forwards communication on the destination’s client registered downspout” and relaying information (see column 4, line 55 through column 5, line 50 and column 6, lines 10-15 and 35-46) that meets the recitation of *forwarder/relay service*. **Richards et al** further discloses the nexus supports network protocol SSL and other encryption process, the SSL provides data encryption, server authentication, message integrity and client authentication for a TCP/IP connection (see column 5, lines 48-64). Therefore as interpreted by the Examiner, **Richards et al** discloses encryption process and authentication using TCP/IP as part of processed data to pass through the firewall. **Richards et al** is silent about representing data of a first application in a format associated with a proxy network protocol configured to communicate data corresponding to another application. However, **Vellanki et al** in an analogous art discloses selecting the most advantageous protocol for communication by a client computer (see column 3-4, summary of the invention) including representing data of a first application in a format associated with a proxy

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network protocol configured to communicate data corresponding to another application so that the data of the first application is communicated through the first connectivity barrier using the proxy network protocol” (see column 10, lines 44-54 and column 13, lines 4-17). **Vellanki et al** discloses data of the browser (first application) are represented in an HTTP format such as HTTP that is configured to communicate data corresponding to another application (such as proxy application or server application) so that the data of the client application is communicated through the first connectivity barrier using the proxy network protocol as interpreted by the Examiner. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the method of **Richards et al** to “representing data of a first application in a format associated with a proxy network protocol that is configured to communicate data corresponding to another application so that the data of the first application is communicated through the first connectivity barrier using the proxy network protocol as taught by **Vellanki et al** because it would allow selection of the most advantageous protocol to be used based on predefined protocol priority (see column 4, lines 33-38). One of ordinary skill in the art would have recognized some of the advantages as suggested by **Vellanki et al** so that the most advantageous protocol can be selected to traverse the firewall (see column 3, lines 19-40 and 56-60).

Richards et al discloses transport layer protocol such as TCP/IP connection can be used to establish communication between client/server using latest web browsers such as Netscape known to support HTTP, FTP, etc. (column 5, lines 43-65 and column 1, lines 56-64) that meets the recitation of *establishing a transport level communications between the forwarder/relay service and the destination computer system located behind a second connectivity barrier*

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(firewall). **Richards et al** also discloses establishing a virtual connection between two computers wherein a session between nexus and one of the computers remains open and even if the other computer connection is lost or interrupted the other computer re-establishes connection (see column 12, lines 42-45 and 63-67). **Richards et al** discloses maintaining the first session, but does not explicitly state maintaining the second session. It is apparent that any of the endpoint sessions can be maintained while the other endpoint connection is temporarily lost and re-establishing connection (e.g. roaming between networks). Roaming between networks is notoriously well known for a wireless to search between networks to reestablish sessions. Maintaining a connection to a destination endpoint when the source roams between network as the connection can be temporary lost is well known in the art as disclosed by **Want et al**. **Want et al** teaches maintaining connections among various computers in a wireless network including mobile computers, and further discloses the importance of maintaining connection even if the connection of the source endpoint is temporarily lost (see prior art, column 3, line 45 through column 4, line 55). See also column 7, lines 15-43. **Want et al** discloses that the application session is maintained even if the session with the mobile is temporarily lost as the mobile re-establishes connection while roaming. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the method of **Richards et al** to use source computer system as mobile users that can roam between networks and re-establish connection when the connection is temporarily lost while maintaining continuity session with the destination computer as taught by **Want et al** (column 7, lines 15-43) because one of the many advantages is that it permits any type of small device mobile units capable of roaming to use the system while maintaining processing continuity without compromising security (column 4, line

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57 through column 5, line 40 and column 6, line 62 through column 7, line 43). One skilled in the art would have been motivated by the suggestions provided by **Want et al** in order to benefit from the advantages as discussed above and to be able to implement the invention with any mobile and stationary computers using various network systems.

As per claim 38, the combined references disclose the limitation of wherein the proxy network protocol includes at least one of HTTP, FTP, and SOCKS (see **Richards et al**, column 5, lines 43-65). **Richards et al** discloses transport layer protocol such as TCP/IP connection between client/server communication using latest web browsers such as Netscape known to support HTTP, FTP, etc. as interpreted by Examiner.

7. **Claims 27-28 and 40** are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent 6,754,707 to **Richards et al** in view of US Patent 5,564,070 to **Want et al** in view of US Patent 5,999,979 to **Vellanki et al** as applied to claim 26 and further in view of US Patent 6,185,606 to **Bereiter**.

As per claims 27-28, **Richards et al** discloses instructions for causing the computer system (nexus) to establish a transport level communications connection to the second computer system regardless of whether a firewall exists in the first computer system (see column 5, lines 1-10 and column 4, lines 63-67), the operations of **Richards et al** can be applied with or without firewall (see column 3, lines 43-51). **Richards et al** does not explicitly disclose making a determination in response to if the second computer system is not located behind a connectivity

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barrier (firewall). **Bereiter** in an analogous art teaches a system to establish a session initiated by the second computer system if the second computer system is located behind a second connectivity barrier and to instruct the first computer system to establish a direct session or transport level communications connection with the second computer system if the second computer system is not located behind a connectivity barrier to adapt to the available communication path, for example (see column 3, line 40 through column 4, line 23). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the method of **Richards et al** to establish a session initiated by the second computer system if the second computer system is located behind a second connectivity barrier and to instruct the first computer system to establish a direct session with the second computer system if the second computer system is not located behind a connectivity barrier in order to adapt to the available communication path as taught by **Bereiter**. One skilled in the art would have been motivated by the suggestions provided by **Bereiter** so as to provide the benefit to adapt to the available communication path.

As per claim 40, **Richards et al** does not explicitly disclose making a determination of the communication node of the destination computer system. **Bereiter** in an analogous art teaches wherein establishing the second session comprises determining a communication mode for communicating between the destination computer system and the forward/relay service and communicating data between the destination computer system and the forward/relay service according to the determined communication mode (see Bereiter, column 4, lines 3-23 and column 4, line 51 through column 5, line 14). **Bereiter** discloses a communication method to

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adapt to different mode of communication depending on the connection preferences. For instance, a transport layer point-to-point protocol connection may be used for messages originating from the client to the server whereas another connection preference is used for messages originating from the server to the client that meets the recitation above. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the method as combined above to determine the communication mode of the destination computer system and communicating data between the destination computer system and the forward/relay service according to the determined communication mode as taught by **Bereiter**. One skilled in the art would have been motivated by the suggestions provided by **Bereiter** so as to provide the benefit to adapt to the available communication path.

8. **Claims 29-30** are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent 6,754,707 to **Richards et al** in view of US Patent 5,564,070 to **Want et al** in view of US Patent 5,999,979 to **Vellanki et al** as applied to claim 26 and further in view of US Patent 6,421,732 to **Alkhatib et al**.

As per claim 29, **Richards et al** does not explicitly disclose *assigning virtual host name* to the computer system. It is known in the art that the packet can contain IP addresses and port numbers or/and domain names. **Alkhatib et al** in an analogous art teaches an IPNet gateway service that can forward and relay connections wherein the destination server is assigned a domain name (column 2, lines 53-60 and figure 1) and the client may have also a domain name (column 6, lines 37-47) so that address translation can be performed. Therefore, it would have

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been obvious to one of ordinary skill in the art at the time the invention was made to modify the method as combined above to include a gateway service that can associate DNS requests with host names because it provides an improved process of addressing source and destination computers based on the requests by performing address translation (column 1, lines 25-40 and column 1, line 60 through column 2, line 7) as taught by **Alkhatib et al.** One skilled in the art would have been motivated by the suggestions provided by **Alkhatib et al** to provide a service that can forward and relay connections wherein the destination server is assigned a domain name with an improved process of addressing source and destination computers based on the requests by performing address translation.

As per claim 30, Alkhatib et al discloses wherein the virtual host names comprise part of a hierarchical naming system, (column 3, lines 53-60). Therefore claim 30 is also rejected on the same rationale as the rejection of claim 29.

Conclusion

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The prior art discloses connection established between relay program and client computers. See PTO-form 892.

9.1 Any inquiry concerning this communication or earlier communications from the examiner should be directed to Carl Colin whose telephone number is 571-272-3862. The examiner can normally be reached on Monday through Thursday, 8:00-6:30 PM.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nasser G. Moazzami can be reached on 571-272-4195. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Carl Colin/

Carl Colin

Patent Examiner, A.U. 2136

December 25, 2007